



SUBSTITUTE SPECIFICATION
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ASARINA PLANT NAMED 'SUN-ASARO'

BOTANICAL/COMMERCIAL CLASSIFICATION

Asarina lophospermum X *Asarina erubescens*/Asarina Plant

VARIETAL DENOMINATION

cv. 'Sun-Asaro'

BACKGROUND OF THE VARIETY

The genus *Asarina* (*Lophospermum*), belonging to the *Scrophulariaceae*, plant is a herbaceous perennial, but is annual in a cold climate, and is frost hardy to frost tender. There are ten species in the genus *Asarina* (*Lophospermum*) and they are native from Mexico to Guatemala. The genus *Asarina* (*Lophospermum*) is similar to the genus *Antirrhinum*, but the differences are its flexible, scandent or clambering stems and its zygomorphic capsule. Corolla hues are various, such as red, violet, or dark purple distally, or whitish or light violet proximally. The *Asarina* plant grows in full light and in well-drained soil flowers in summer and the flowering period is long.

The *Asarina erubescens* (*Lophospermum erubescens*) plant is very vigorous plant, having long stems and internodes, and large flowers of which the edge is excurved. It has few flowers, because it grows very quickly and blooms only at the top of the stem. The *Asarina lophospermum* (*Lophospermum scandens*) plant has short stems and internodes, medium sized flowers of which the edge is incurved. Accordingly, this invention is aimed at obtaining a new variety having strong purplish-red colored, large excurved petals, together with a creeping growth habit, medium length internode, many branches, and a high resistance to heat, pests and diseases.

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BREEDING PROCESS

First of all, self-pollination of 'Sun-Asaware' (non-patented in the United States), which was bred by crossing
5 between *Asarina lophospermum* (*Lophospermum scandens*) as female parent and *Asarina erubescens* (*Lophospermum erubescens*) as male parent, was conducted in October 1998. In November, some seeds were obtained from the crossing. The seeds were sown and grown there in March 1999. In August 1999, 5 seedlings were selected in
10 view of having the strong purplish-red, excurved and non-overlapped petal, and were propagated by cutting. Those seedlings were used in a trial by flower potting and bedding from May 2000. Finally one variety was selected in view of being no shorter than 'Sun-Asaware' (unpatented) and taller than 'Red Dragon'
15 (unpatented). The botanical characteristics of that plant were then examined, using similar variety 'Red Dragon' for comparison. As a result, it was concluded that this *Asarina* plant is distinguishable from all other varieties, whose existence is known to us, and is uniform and stable in its characteristics.
20 The new variety of *Asarina* plant was named 'Sun-Asaro'.

This *Asarina* plant 'Sun-Asaro' is presently maintained at 863-1, Aza-Iketani, Omori-cho, Yokaichi-shi, Shiga-ken, Japan.

This new and distinct variety of *Asarina* plant, 'Sun-Asaro', was asexually reproduced by tissue culture at the aforementioned
25 and the homogeneity and stability thereof were confirmed. The new cultivar reproduces true to type in successive generations of asexual reproduction.

DESCRIPTION

30 In the following description, the color-coding is in accordance with the Horticultural Color Chart of The Royal Horticultural Society, London, England (R.H.S. Color Chart).

The botanical characteristics of the parent plant 'Sun-Asaware' (*Asarina lophospermum* (*Lophospermum scandens*) x *Asarina*
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erubescens (*Lophospermum erubescens*)) used in the breeding of
'Sun-Asaro' as follows.

Plant;

Growth habit - Creeping

5 Height - Approximately 100 cm

Stem;

Thickness - Approximately 2.9 mm

Color - Strong yellow green (R.H.S.143A)

Pubescence - Dense

10 Branching - Many

Internode length - Approximately 5.5 cm

Leaf;

Arrangement - Alternate

Shape - Triangular

15 Margin - Dentate

Length - Approximately 7.8 cm

Width - Approximately 9 cm

Color of upper side - Moderate olive-green (R.H.S.146A)

Color of under side - Moderate yellow-green (R.H.S.146B)

20 Thickness - Approximately 0.3 mm

Length of petiole - Approximately 5.5 cm

Attachment angle to stem - Upward

Flower;

Shape - Normal-type

25 Gap between upper-labiate petal and lower-labiate petal - Broad

Diameter - Approximately 3.5 cm

Width of corolla - Approximately 4.8 cm

Length of tube - Approximately 7.2 cm

Width of corolla tube - Approximately 2.2 cm

30 Color of upper-labiate petal - Strong purplish-red (R.H.S.70A)

Color of lower-labiate petal - Strong purplish-red (R.H.S.70A)

Outside color of corolla tube - Strong purplish-red (R.H.S.70A)

Type of upper-labiate petal - Medium

Shape of lower-labiate petal - Overlapped

35 Type of lower-labiate petal - Excurved

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Petal number - 5

Pubescence of corolla tube - Absent

Shape of pistil - Hook-shaped

Color of pistil - Light yellow-green (R.H.S. 2D)

5 Stamen number - 4

Color of anther - Light yellow-green (R.H.S.145C)

Calix length - Approximately 3.2 cm

Color of calyx - Brilliant yellow-green (R.H.S.149A)

Peduncle length - Approximately 3.8 cm

10 Peduncle thickness - Approximately 1.2 mm

Color of peduncle - Vivid yellow-green (R.H.S.144A)

Flowering time - Long

Resistance;

Coldness - Medium

15 Heat - Strong

Diseases - Strong

Pests - Strong

20 The botanical characteristics of the similar variety *Asarina erubescens* (*Lophospermum erubescens*) used for examination as a comparison are as follows.

Plant;

Growth habit - Climber

Height - more than 100 cm

25 Stem;

Thickness - Approximately 3.5 mm

Color - Moderate yellow-green (R.H.S. 146B)

Pubescence - Dense

Branching - Many

30 Internode length - Approximately 7.5 cm

Leaf;

Arrangement - Arternate

Shape - Triangular

Margin - Crenate

35 Length - Approximately 8 cm

- 5 -

Width - Approximately 8.5 cm

Color of upper side - Moderate olive-green (R.H.S. 146A)

Color of under side - Moderate yellow-green (R.H.S. 147B)

Thickness - Approximately 0.3 mm

5 Length of petiole - Approximately 5.2 cm

Attachment angle to stem - Upward

Flower;

Shape - Normal-type

Gap between upper-labiate petal and lower-labiate petal - Broad

10 Diameter - Approximately 4.4 cm

Width of corolla - Approximately 4.7 cm

Length of tube - Approximately 7.5 cm

Width of corolla tube - Approximately 3.6 cm

Color of upper-labiate petal - Vivid purplish-red (R.H.S. 63B)

15 Color of lower-labiate petal - Vivid purplish-red (R.H.S. 63B)

Outside color of corolla tube - Moderate purplish-red (R.H.S. 64C)

Type of upper-labiate petal - Medium

Shape of lower-labiate petal - Non-overlapped

20 Type of lower-labiate petal - Excurved

Petal number - 5

Pubescence of corolla tube - Present

Shape of pistil - Hook-shaped

Color of pistil - Light yellow-green (R.H.S. 2D)

25 Stamen number - 4

Color of anther - Light yellow-green (R.H.S.145C)

Calyx length - Approximately 2.2 cm

Color of calyx - Vivid yellow-green (R.H.S.144A)

Peduncle length - Approximately 4.8 cm

30 Peduncle thickness - Approximately 1.5 mm

Color of peduncle - Brilliant yellow-green (R.H.S. 149A)

Flowering period - Long

Resistance;

Coldness - Medium

35 Heat - Strong

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Diseases - Strong

Pests - Strong

The botanical characteristics of the similar variety 'Red
5 Dragon' used for examination as a comparison are as follows.

Plant;

Growth habit - Creeping

Height - Approximately 15 cm

Stem;

10 Thickness - Approximately 2.7 mm

Color - Moderate yellow-green (R.H.S. 137C)

Pubescence - Normal

Branching - Many

Internode length - Approximately 2.8 cm

15 Leaf;

Arrangement - Alternate

Shape - Triangular

Margin - Dentate

Length - Approximately 6.8 cm

20 Width - Approximately 4.5 cm

Color of upper side - Grayish-olive-green (R.H.S. 147A)

Color of under side-Moderate yellow-green (R.H.S. 147B)

Thickness - Approximately 0.15 mm

Length of petiole - Approximately 4 cm

25 Attachment angle to stem - Upward

Flower;

Shape - Normal-type

Gap between upper-labiate petal and lower-labiate petal - Broad

Diameter - Approximately 1.8 cm

30 Width of corolla - Approximately 2.2 cm

Length of tube - Approximately 6.6 cm

Width of corolla tube - Approximately 1.7 cm

Color of upper-labiate petal - Moderate purplish-red (R.H.S.
58A)

35 Color of lower-labiate petal - Moderate purplish-red (R.H.S.

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58A)

Outside color of corolla tube - Moderate purplish-red (R.H.S.

58A)

Type of upper-labiate petal - Medium

5 Shape of lower-labiate petal - Overlapped

Type of lower-labiate petal - Incurved

Petal number - 5

Pubescence of corolla tube - Absent

Shape of pistil - Hook-shaped

10 Color of pistil - Light yellow-green (R.H.S. 2D)

Stamen number - 4

Color of anther - Light yellow-green (R.H.S.145C)

Calyx length - Approximately 3.1 cm

Color of calyx - Brilliant yellow-green (R.H.S.149A)

15 Peduncle length - Approximately 4.2 cm

Peduncle thickness - Approximately 1.3 mm

Color of peduncle - Strong yellow-green (R.H.S. 144B)

Flowering period - Long

Resistance;

20 Coldness - Medium

Heat - Strong

Diseases - Strong

Pests - Strong

25 SUMMARY OF THE VARIETY

The new Asarina plant has a creeping growth habit and has short internode stems. The stem color is moderate yellow-green. The flower is a Penstemon-type and large. Both of the petal and the outside of corolla tube colors are strong purplish-red. The
30 plant has a high resistance to heat, pests and diseases.

BRIEF DESCRIPTION OF THE DRAWING

FIG.1 is a photograph giving a partial view of the new
35 variety of Asarina plant 'Sun-Asaro' planted in a pot.

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FIG.2 is a photograph of flowers of the new variety of *Asarina* plant 'Sun-Asaro'.

DESCRIPTION OF THE VARIETY

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The botanical characteristics of this new and distinct variety of *Asarina* plant 'Sun-Asaro' are as follows. The plants shown in the photographs and described below were about 5 months old at the time of description and were grown in 21 cm diameter containers at 863-1, Aza-Iketani, Omori-cho, Yokaichi-shi, Shiga-ken, Japan.

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Plant;

Growth habit - Creeping

15

Diameter - varies with growth conditions. When grown in ground, plant diameter is about 140 cm.

Stem;

Length - About 70 cm.

Thickness - Approximately 3.2 mm

Color - Moderate yellow-green (R.H.S. 146D)

20

Pubescence - Dense

Branching - Many

Internode length - Approximately 2.8 cm

Leaf;

Arrangement - Alternate

25

Shape - Triangular

Margin - Dentate

Length - Approximately 7.8 cm

Width - Approximately 9 cm

Color of upper side - Strong yellow-green (R.H.S. 144A)

30

Color of under side - Moderate yellow-green (R.H.S. 143C)

Apex - acute

Base - cordate

Thickness - Approximately 0.2 mm

Diameter of petiole - about 1.3 mm

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Length of petiole - Approximately 3.5 cm

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Color of petiole - near 60B

Attachment angle to stem - Upward

Flower;

Shape - Penstemon-type

5 Gap between upper-labiate petal and lower-labiate petal - Broad

Diameter - Approximately 4.4 cm

Width of corolla - Approximately 4.7 cm

Length of tube - Approximately 5.3 cm

Width of corolla tube - Approximately 1.8 cm

10 Color of upper-labiate petal (upper and lower surfaces) -
Strong purplish-red (near R.H.S. 63A)

Color of lower-labiate petal (upper and lower surfaces) -
Strong purplish-red (near R.H.S. 63A)

15 Outside color of corolla tube - Strong purplish-red (near
R.H.S. 63A)

Shape of lower-labiate petal - Non-overlapped

Curvature of lower-labiate petal - Excurved

Petal number - 5

20 The upper labiate petal is two lobed and the lobe width is about
1.95 cm, and the depth of the lobation is about 1.56 cm. The
apex of the lobes is cuspidate and the margin is entire. The
lower labiate petal is three lobed and the width of the side
lobes is about 2.0 cm and that of the center lobe is about 1.69
cm. The depth of the lobation of the lower labiate petal is
25 about 2.2 cm and the apex of all three lobes is mucronate and the
margin is entire.

Pubescence of corolla tube - Present

Shape of pistil - Hook-shaped

Number of pistils/flower - 4

30 Color of pistil - Light yellow-green (R.H.S. 2D)

Stamen number - 4

Color of anther - Light yellow-green (R.H.S.145C)

Calyx length - Approximately 3.2 cm

Color of calyx - Brilliant yellow-green (R.H.S.145B)

35 Peduncle length - Approximately 3.1 cm

- 10 -

Peduncle thickness - Approximately 1.1 mm

Color of peduncle - Moderate yellow-green (R.H.S. 146C)

Flowering period - Long; from May to October at 863-1, Aza-Iketani, Omori-cho-Yokaichi-shi, Shiga-ken, Japan

5 Lastingness of Bloom on Plant - 3 to 4 days

Time to Produce a Flowering Plant - about 90 days after cuttings in a greenhouse

Resistance;

Coldness - Medium

10 Heat - Strong

Diseases - Strong

Pests - Strong

This new variety of *Asarina* plant 'Sun-Asaro' is most suitable for hanging baskets.

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COMPARISON WITH SIMILAR VARIETY

The new variety of *Asarina* plant 'Sun-Asaro' is different from a parent variety, *Asarina* 'Sun-Asaware' in the following points,

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1. The plant height of 'Sun-Asaro' is much lower than that of 'Sun-Asaware'.

2. The internode length of 'Sun-Asaro' is much shorter than that of 'Sun-Asaware'.

25

3. The flower shape of 'Sun-Asaro' is Penstemon-type, while that of 'Sun-Asaware' is normal-type.

4. The color of whole petal and corolla tube of 'Sun-Asaro' is strong purplish-red (R.H.S.63A), while the whole petal and corolla tube color of 'Sun-Asaware' is strong purplish-red (R.H.S.70A).

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5. The lower-labiate petal shape of 'Sun-Asaro' is non-overlapped while that of 'Sun-Asaware' is overlapped.

6. The pubescence of corolla tube of 'Sun-Asaro' is present while that of 'Sun-Asaware' is absent

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The new variety of *Asarina* plant 'Sun-Asaro' is different from a similar variety, 'Red Dragon' in the following points,

1. The plant height of 'Sun-Asaro' is much higher than that of 'Red Dragon'.
- 5 2. The flower of 'Sun-Asaro' is larger than that of 'Red Dragon'.
3. The color of whole petal and corolla tube of 'Sun-Asaro' is strong purplish-red (R.H.S.63A) while that of 'Red Dragon' is moderate purplish-red (R.H.S.58A).
- 10 4. The lower-labiate petal type of 'Sun-Asaro' is excurved while that of 'Red Dragon' is incurved.